

THE BIO-CURVATURE OF SPACETIME.

The following ideas are not intended to be formalized proof of anything, but will develop an intuitive concept based on spacetime, entropy, and the accumulation of biological information as well as intelligence and an additional 'coordinate' for spacetime defined by an entropy-information 'function'.

The notion essentially is that biological systems are the maximum states of complexity in the universe. The ability of DNA to maintain and accumulate structure is a manifestation of a dense matter-information perturbation of spacetime.

The original spacetime shock waves from the Big Bang have different 'wavelengths'. When shock fronts of different wavelengths coincide there is a localized increase in the density of matter (similar to constructive interference) and consequently information 'bits' or patterns. This density perturbation may be on a scale such that protocusters of galaxies may form (or on a larger scale, super-protocusters). Once the condensation of matter begins (collapse by gravitation), the birth of galaxies and stellar evolution is under way.

Entropy manifests its dictates as accumulations of information which become more and more complex. The eventual outcome is a very small (at least in terms of the dimensions of spacetime) compact information system (the brain) which allows spacetime to view itself. The result of this development is a spacetime 'neuron' which may be part of an evolving network of beings which could comprise an information-spacetime brain.

One may also see the biocurvature of space as a locally compact ordering of information which is 'conscious' and can learn. The detection of information as an 'event' and determination of its geodesic has been perhaps the basis of the ability of some to 'sense' the presence of living matter whose structure is complex enough to noticeably change the local nature of spacetime by means of intricate biological fields (generated by neural networks and molecular structure).

The upward accumulation of information seems to be a property of the universe in general. The peaks of information complexity are very small and local perturbations which may at this stage in the universes' evolution be extremely rare. One may note that these local and isolated phenomena are destined to have negligible effect in the overall structure of spacetime. It may be that these events will

represent a late phenomena in the evolution of spacetime.

These information 'sinks' are located as a function of the entropy-density structure of spacetime. If a function or other description of spacetime could predict the distribution of these events (as a result of the examination of the large scale structure), we might use this as a method of locating intelligence in the universe. The distribution of these events would be defined in terms of parameters entailing cosmological theories which include the production and retention of information as well as those entities which modify and store knowledge. It may be advantageous to study life as a highly organized manifestation of spacetime.

The ideas and terms used above need to be formalized in order to deal with 'real' concepts in an empirical context. This is the next move planned.

References;

- 'The Origin of Life', by A.I.Oparin
- 'Exobiology', by C. Ponnaperuma (editor)
- 'Lives of a Cell', by L. Thomas
- 'Gravitation', by Misner, Thorne, and Wheeler
- 'The Large Scale Structure of Spacetime', by Hawking and Ellis
- 'Gravitation and Spacetime', by O'Hanian

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